

Figure 1.—Muskegon River watershed drainage.

1. Addis Creek
2. Bear Creek - Missaukee County
3. Bear Creek - Muskegon County
4. Bennet Creek
5. Betts Creek
6. Big Creek - Mecosta County
7. Big Creek - Roscommon County
8. Big Stone Creek
9. Bigelow Creek
10. Blodgett Creek
11. Brooks Creek - Newaygo County
12. Brooks Creek - Newaygo County
13. Buckhorn Creek
14. Bull Kill Creek
15. Burt Creek
16. Butler Creek
17. Butterfield Creek
18. Byers Creek
19. Cat Creek
20. Cedar Creek
21. Chippewa Creek
22. Clam River
23. Cold Creek
24. Cold Spring Creek
25. Cole Creek
26. Cracker Creek
27. Cranberry Creek
28. Dalziel Creek
29. Dead Horse
30. Dead Stream
31. Dishwash Creek
32. Doc and Tom Creek
33. Dry Run Creek
34. Dye Creek
35. East Branch Little Muskegon
36. East Branch Wolf Creek
37. East Branch Hersey Creek
38. Floodwood Creek
39. Franz Creek
40. Gilbert Creek
41. Giss-I-Was Creek
42. Graham Creek
43. Green Creek
44. Grindstone Creek
45. Handy Creek
46. Haymarsh Creek
47. Hersey River
48. Higginson Creek
49. Hoffmyer Creek
50. Hoffmyer Drain
51. Jewit Creek
52. Johnson Creek
53. Kinney Creek
54. Kinny Creek
55. Kissinger Creek
56. Lincoln Creek
57. Little Cedar Creek
58. Little Henna Creek
59. Little Muskegon River
60. Macks Creek
61. McKistry Creek
62. Middle Branch River
63. Minnie Creek
64. Mitchel Creek
65. Mosquito Creek - Muskegon County
66. Mosquito Creek - Missaukee County
67. Palmer Creek
68. Paris Creek
69. Penoyer Creek
70. Pogy Creek
71. Polick Creek
72. Pup Creek
73. Quigley Creek
74. Rice Creek
75. Rosy Run Creek
76. Ryan Creek
77. Sand Creek
78. Sandy Run Creek
79. Schroder Creek
80. South Branch Townline
81. South Mitchel
82. Sweeter Creek
83. Sylvester Creek
84. Tamarack Creek
85. Taylor River
86. The Cut
87. Thorn Creek
88. Townline Creek
89. West Branch Clam River
90. West Branch Muskegon River
91. West Branch Wolf Creek
92. Whetstone Creek
93. Whisky Creek
94. Williams Creek
95. Willow Run
96. Wolf Creek

Figure 1.–Legend.

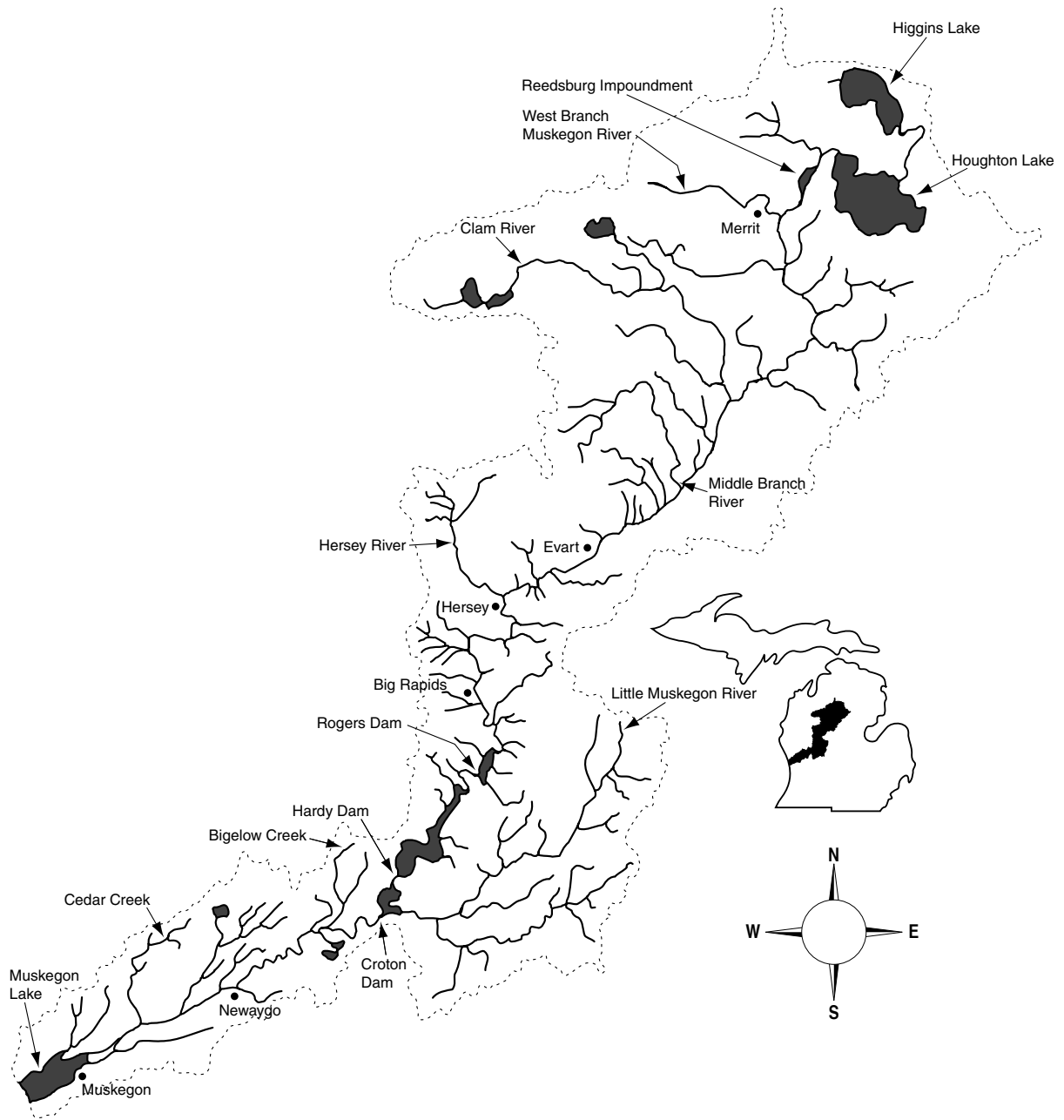


Figure 2.—Major tributaries and landmarks in the Muskegon River watershed.

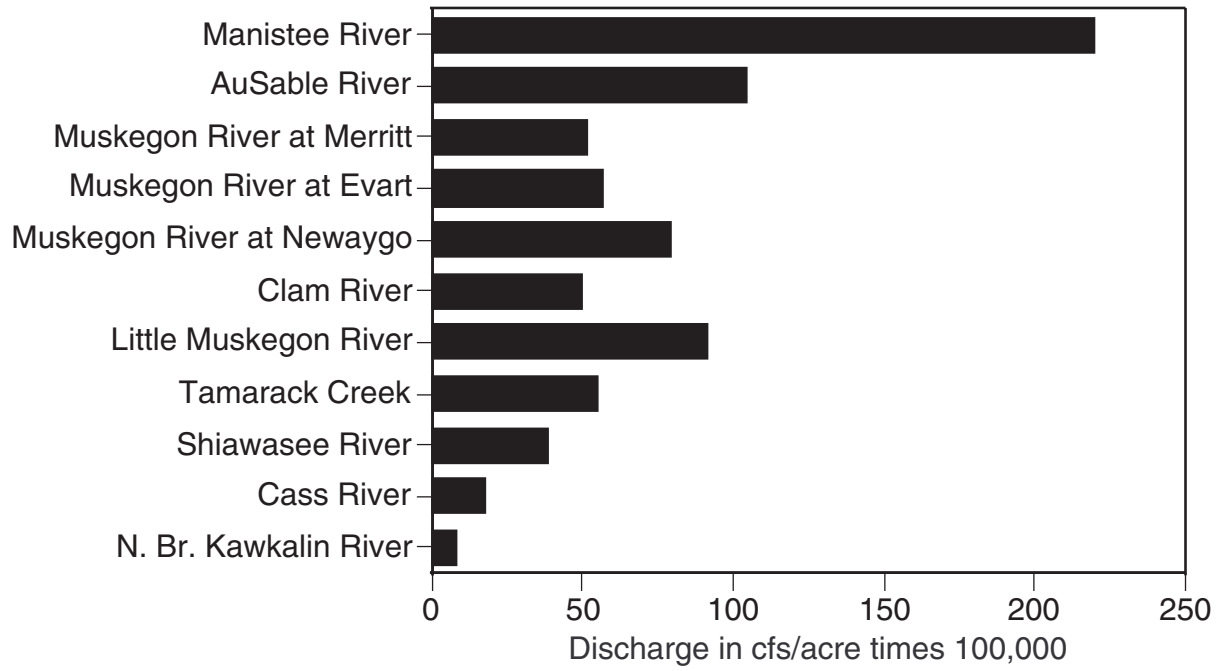


Figure 3.—Baseflow yield for some southern Michigan rivers. Data from Michigan Department of Natrual Resources, Fisheries Division records.

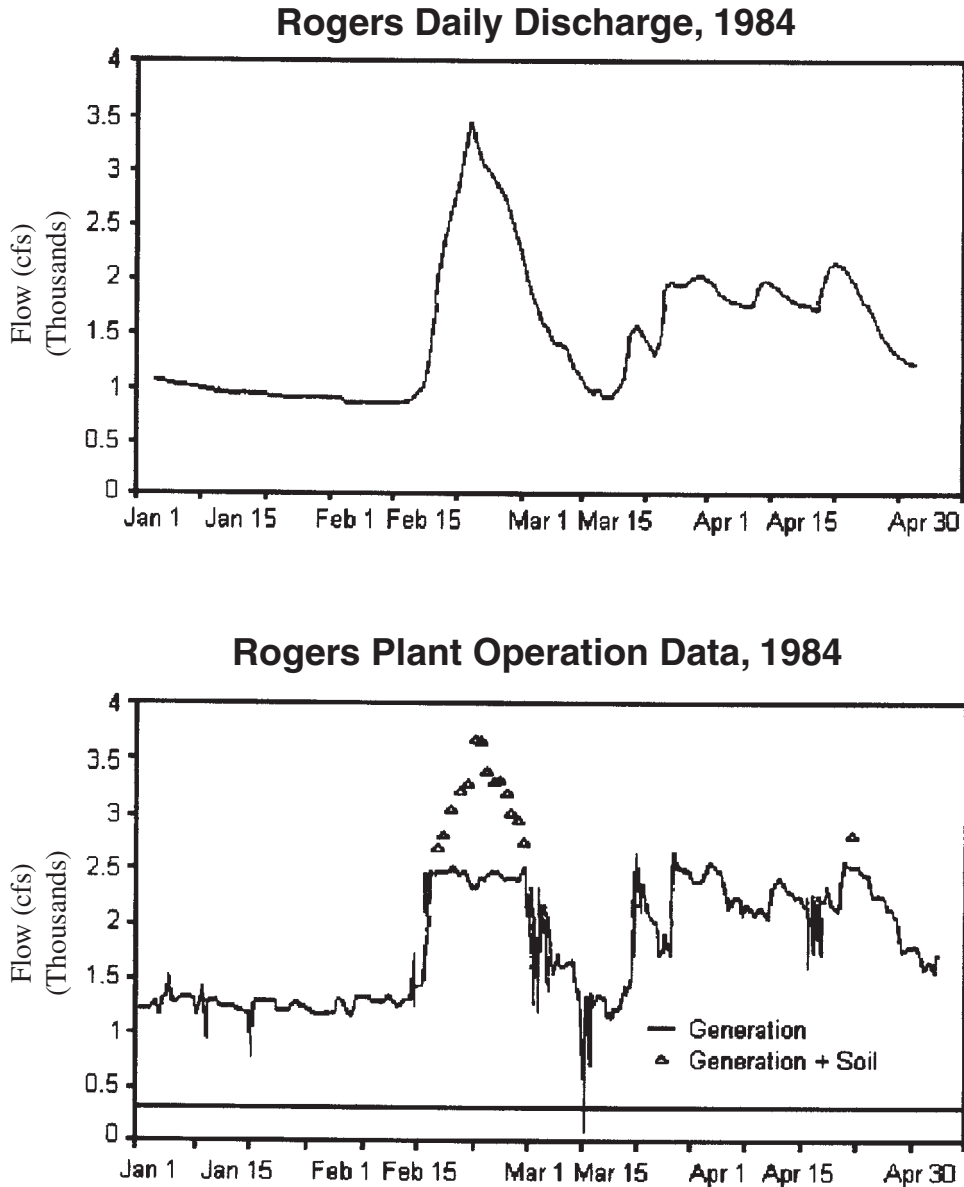


Figure 4.—Daily discharge at the USGS gauge at Ewart (top figure), compared with total flow at the Rogers Project (bottom figure), 1984, Muskegon River, Michigan. Figure from Lawler, Matusky & Skelly Engineers (1991a).

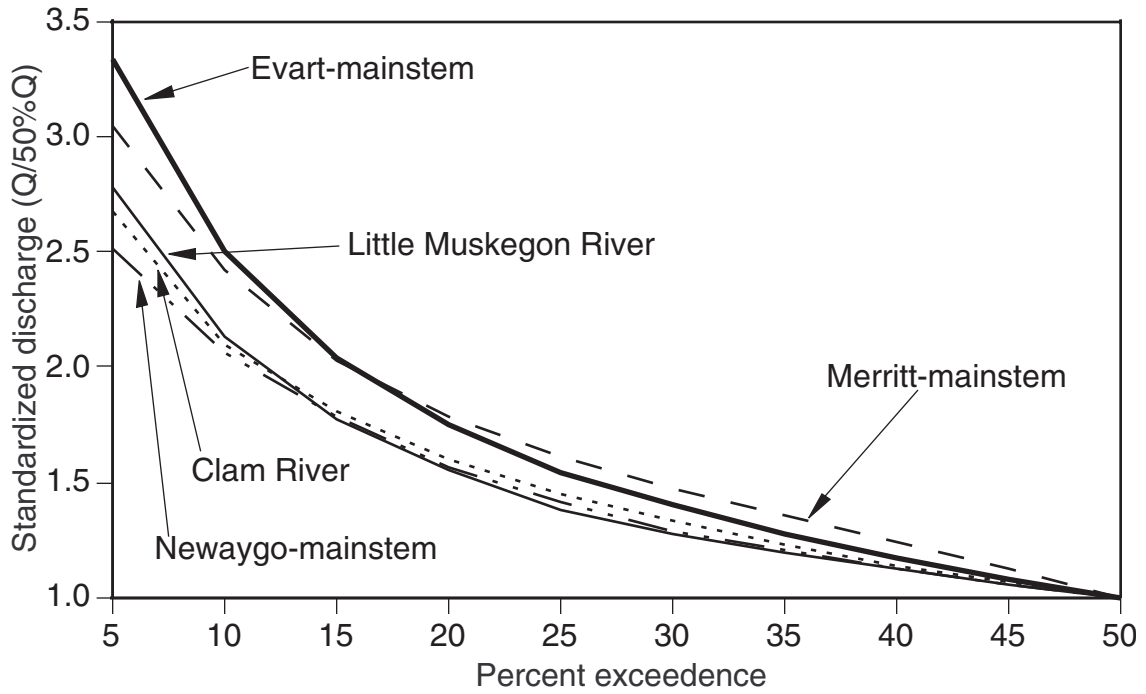


Figure 5.—Standardized high flow curves for the Muskegon River and two tributaries. Data from Blumer et al. (1991).

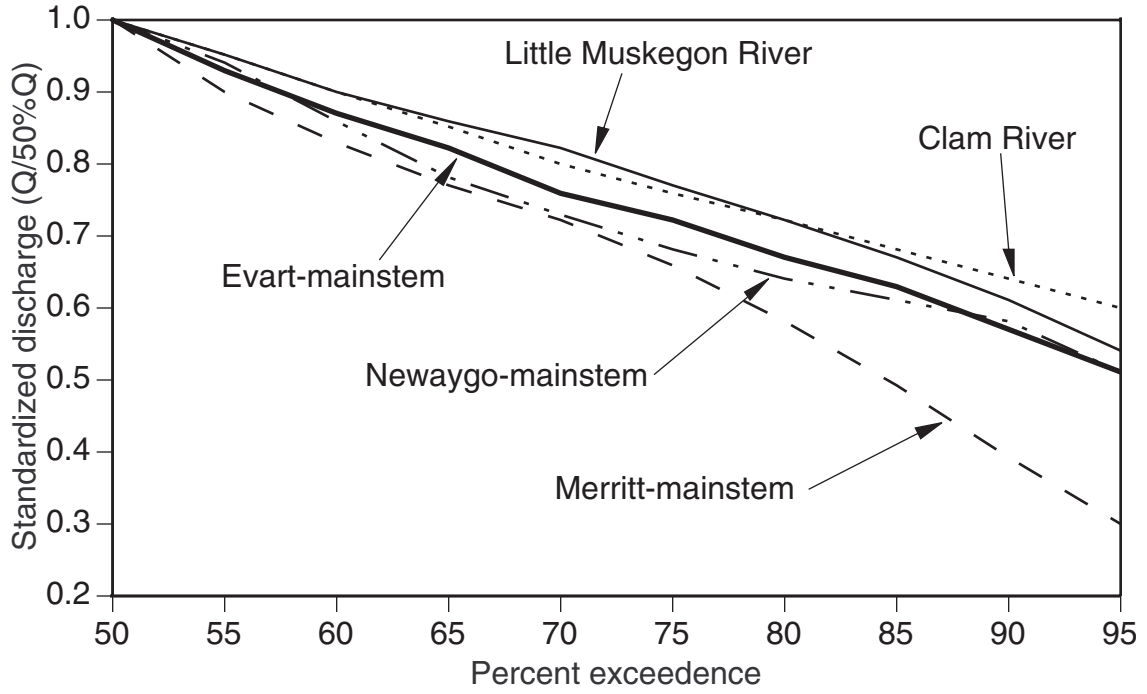


Figure 6.—Standardized low flow curves for the Muskegon River and two tributaries. Data from Blumer et al. (1991).

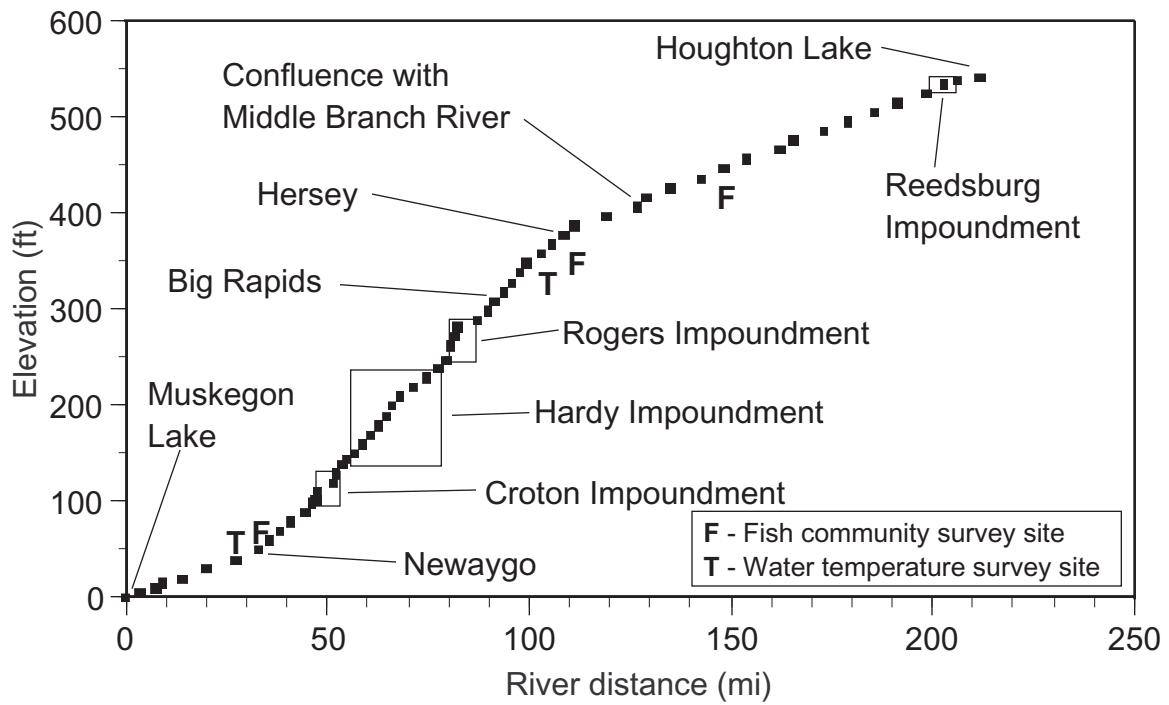


Figure 7.—Muskegon River gradient profile, and fish community and water temperature sites used during 1989 and 1992. Data from Michigan Department of Natural Resources, Fisheries Division records.



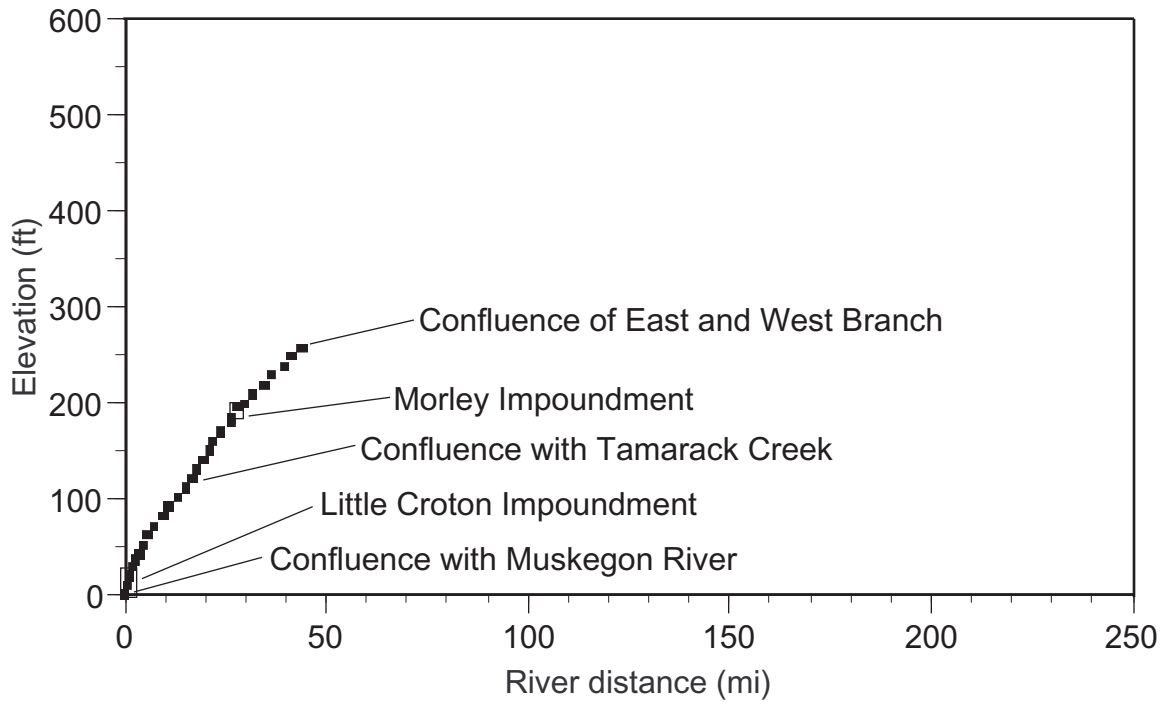


Figure 8.–Little Muskegon River gradient profile. Data from Michigan Department of Natural Resources, Fisheries Division records.

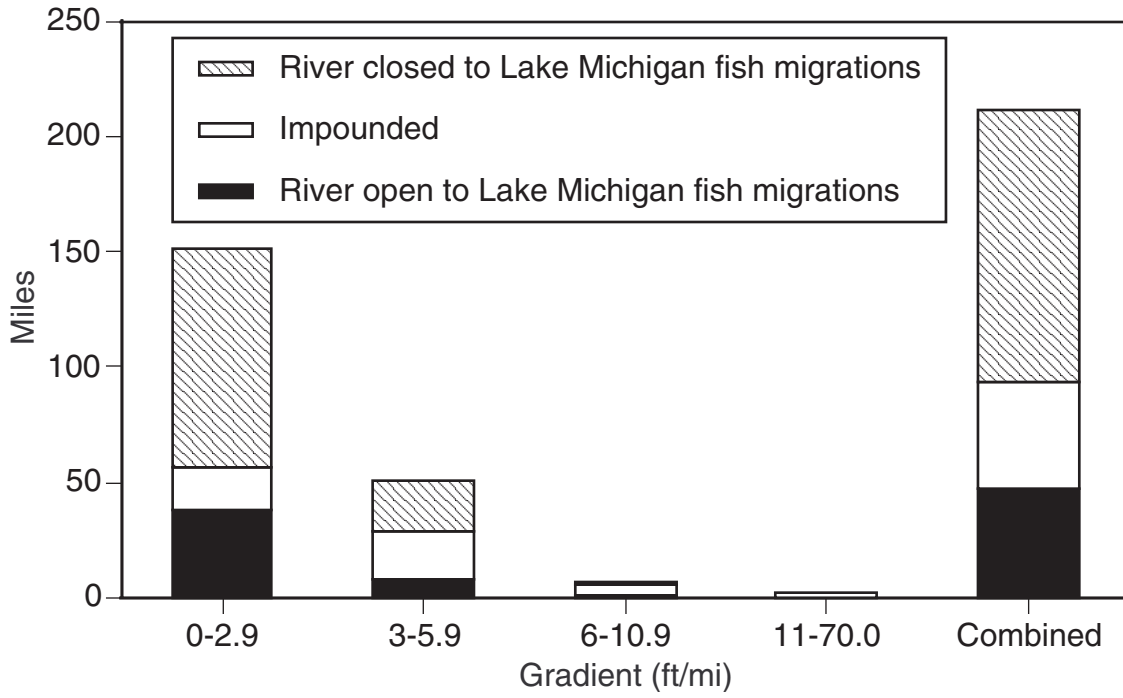


Figure 9.—Muskegon River gradient distribution. Data from Michigan Department of Natural Resources, Fisheries Division records.

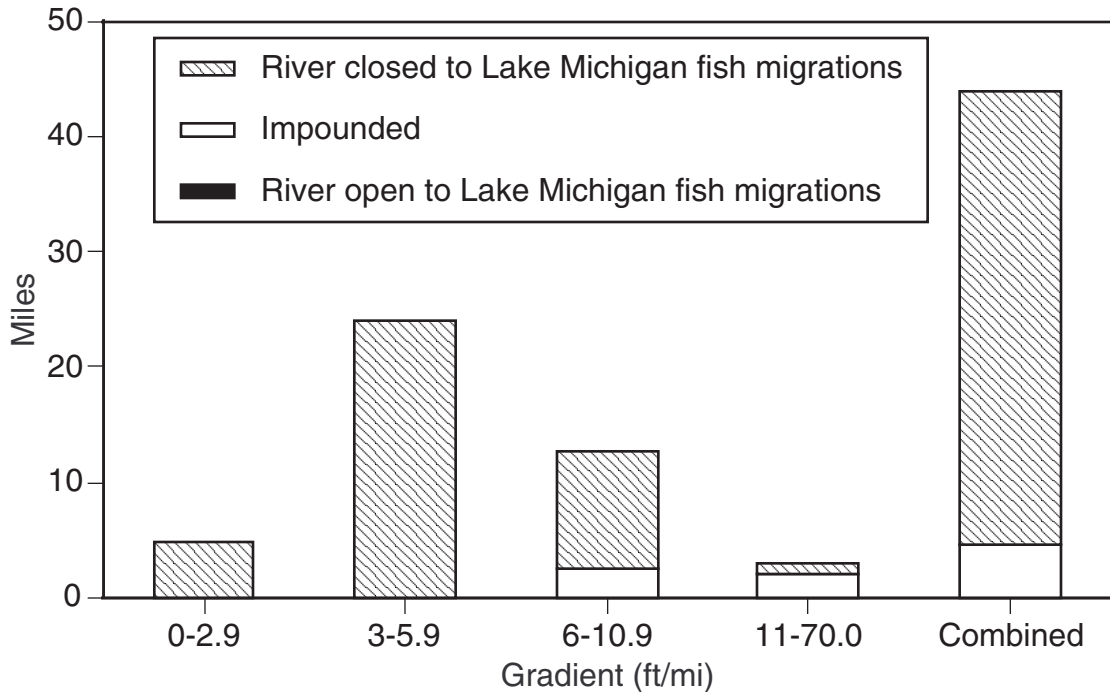


Figure 10.—Little Muskegon River gradient distribution. Data from Michigan Department of Natural Resources, Fisheries Division records.

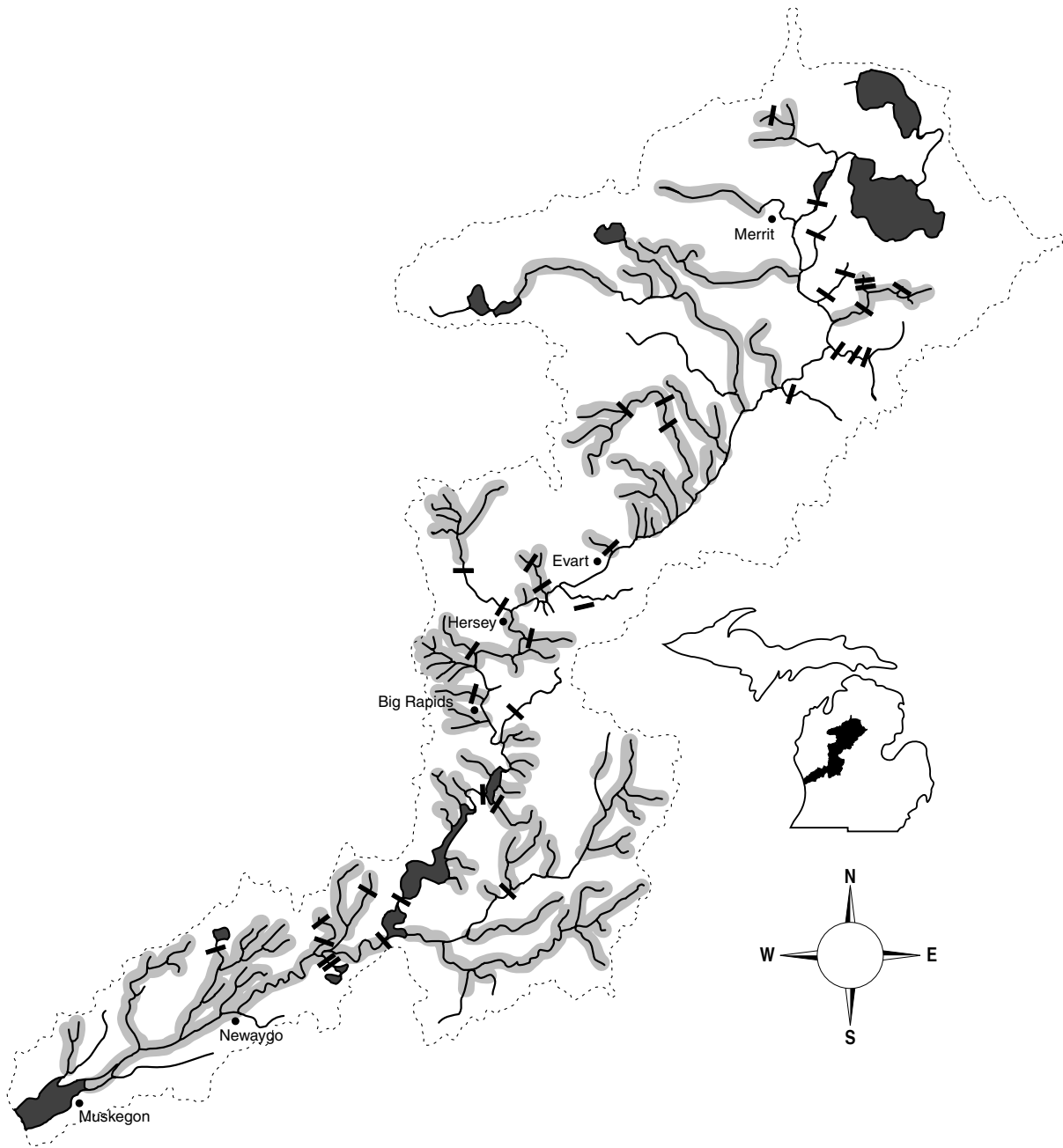


Figure 11.—Designated trout streams and dams in the Muskegon River watershed. Data from Michigan Department of Natural Resources, Fisheries Division and Michigan Department of Environmental Quality, Land and Water Management Division.

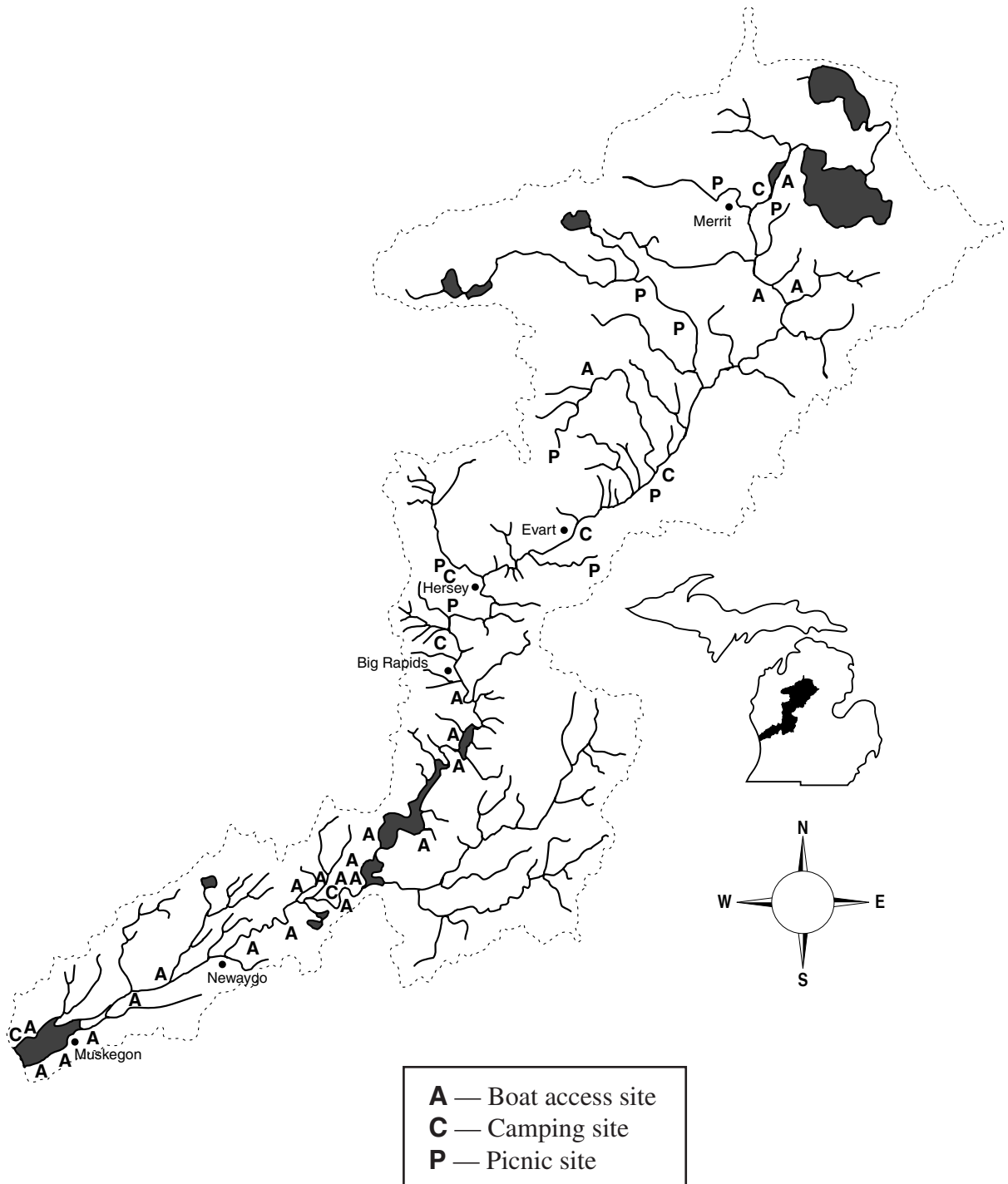


Figure 12.—Public access locations on the Muskegon River.

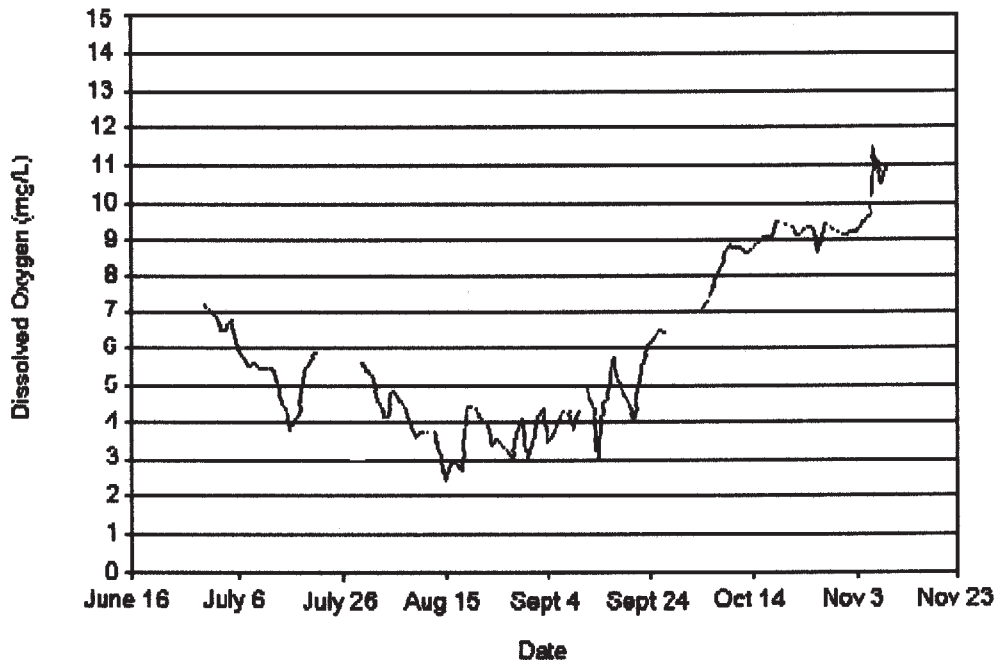


Figure 13.—Dissolved oxygen in Hardy Dam tailwater during 1990. Michigan Department of Environmental Quality, surface water quality standard for Croton Impoundment is 5mg/l or greater. Figure from Lawler, Matusky & Skelly Engineers (1991a).

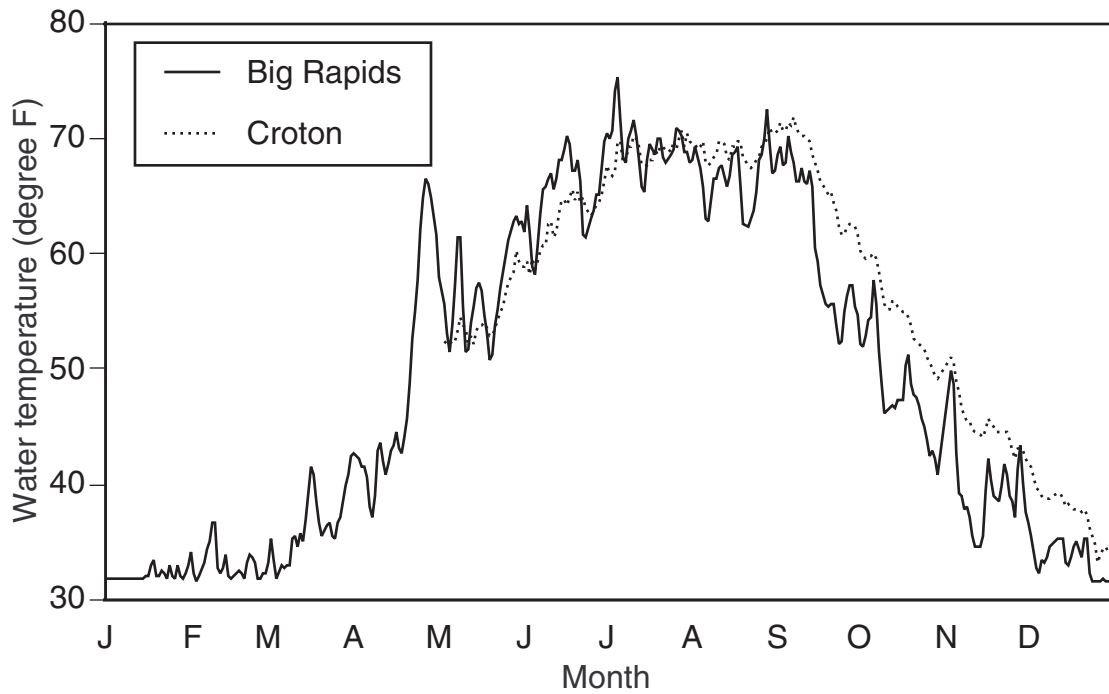


Figure 14.—Average daily water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam during 1990. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.

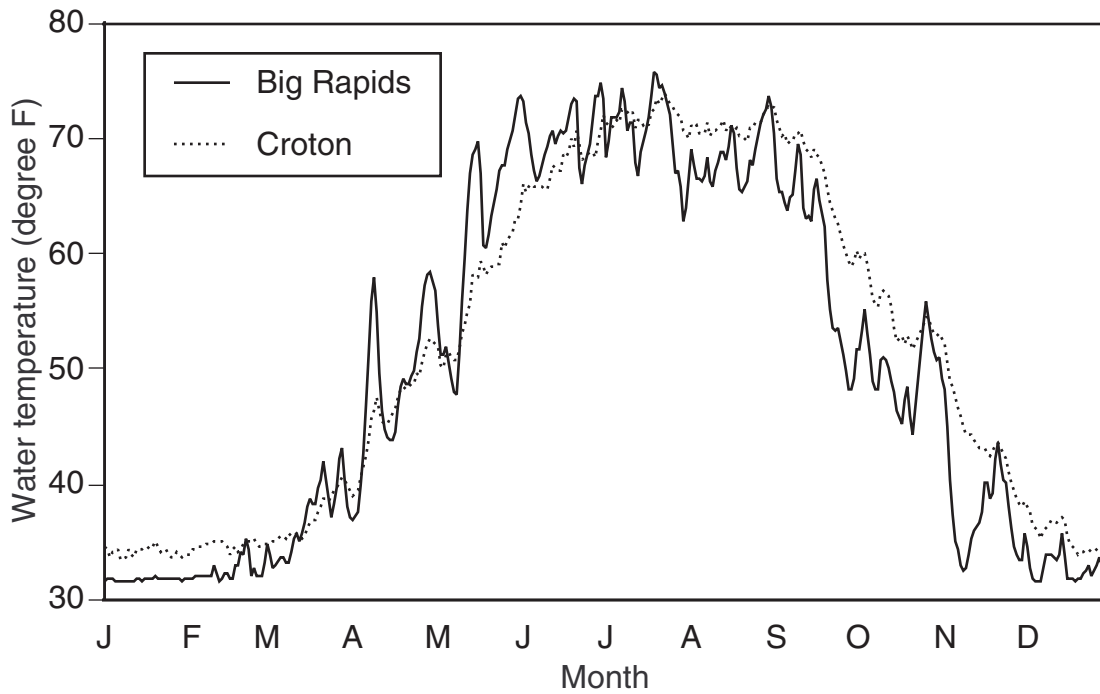


Figure 15.—Average daily water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam during 1991. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.



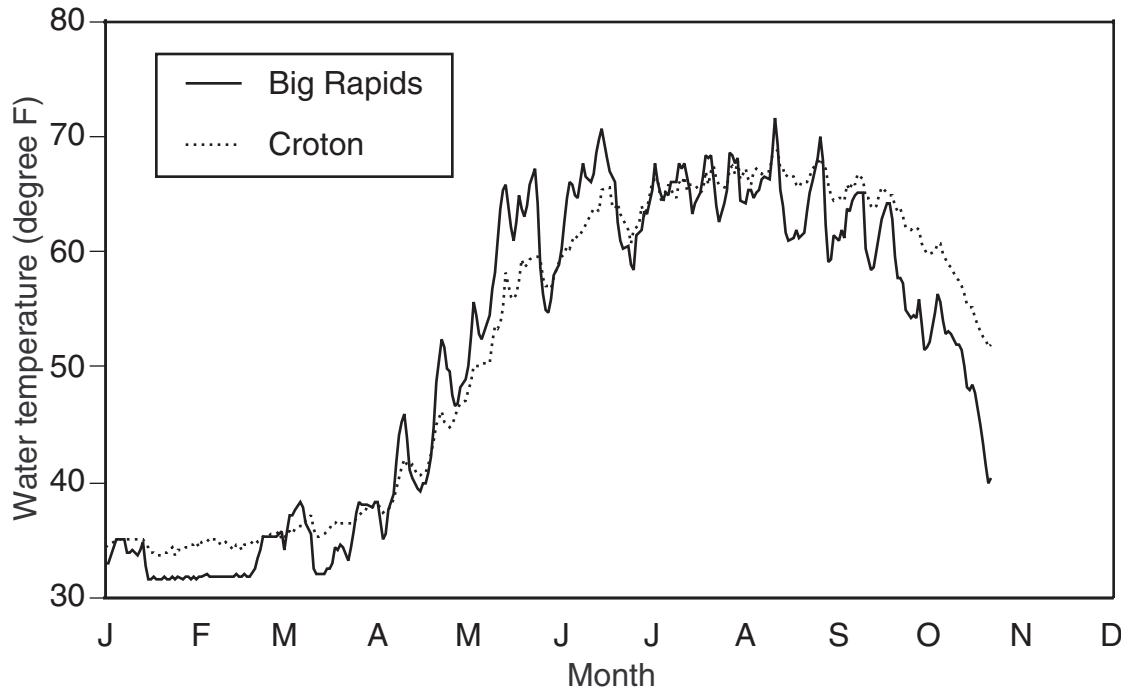


Figure 16.—Average daily water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam during 1992. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.

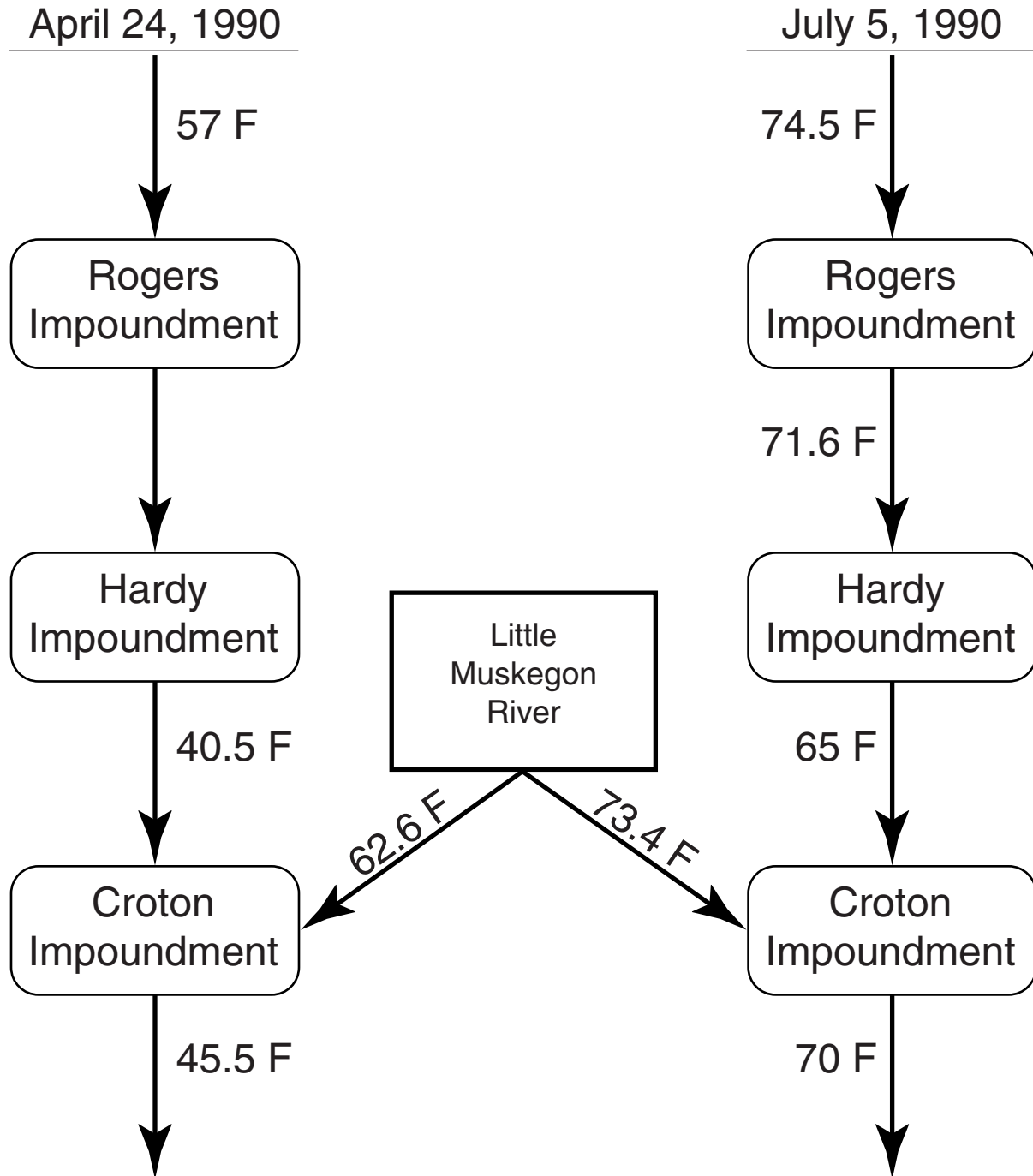


Figure 17.—Muskegon River water temperatures on April 24 and July 5, 1990. Temperature data from Consumers Power Company records.

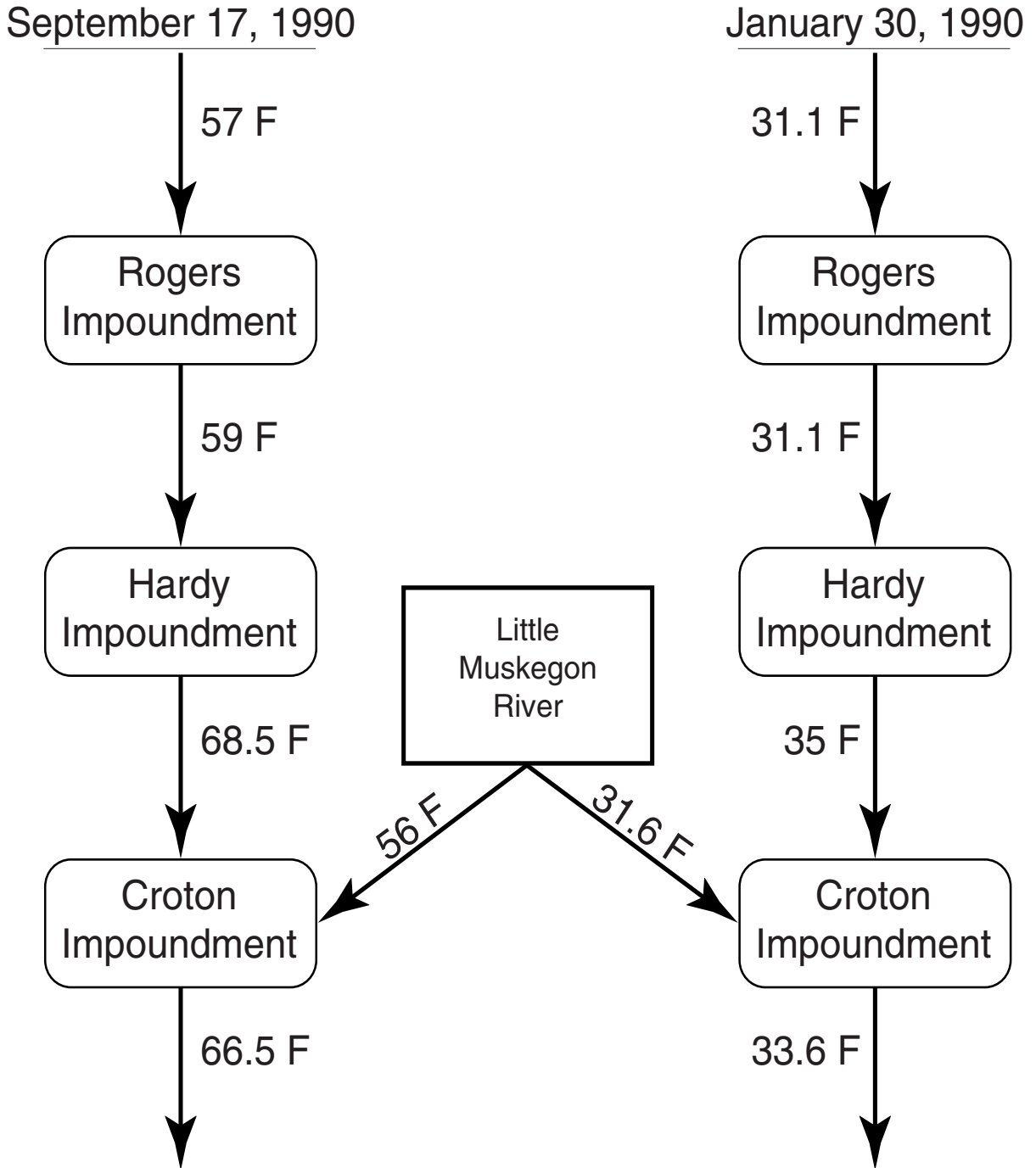


Figure 18.—Muskegon River water temperatures on September 17 and January, 1990. Temperature data from Consumers Power Company records.

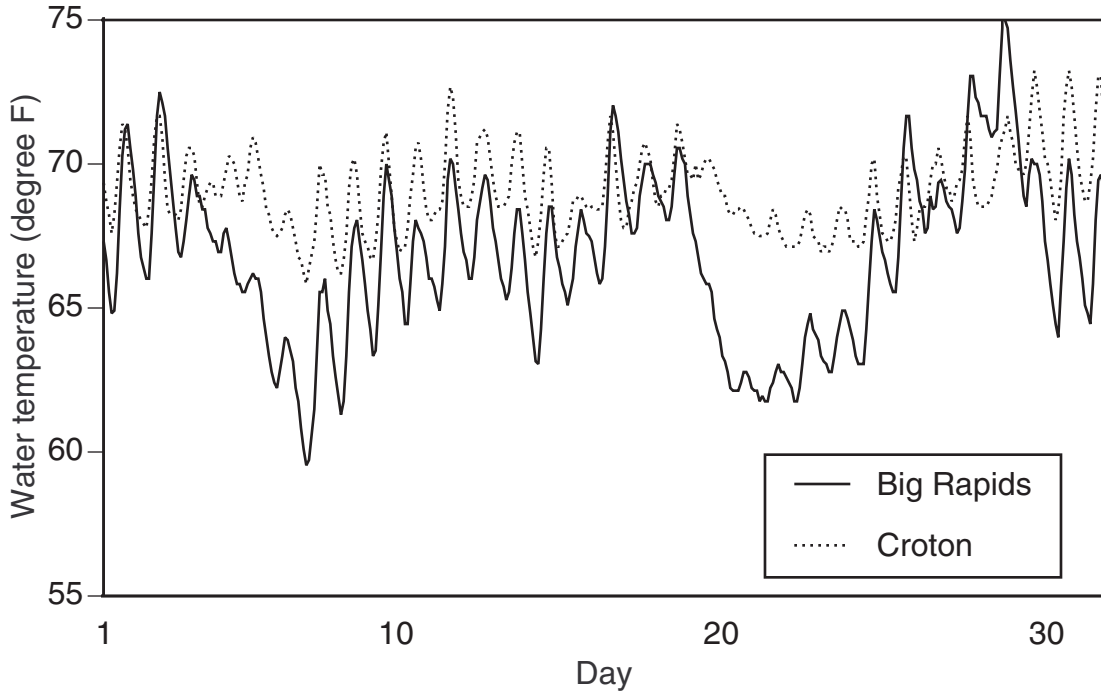


Figure 19.—August, 1990 water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.

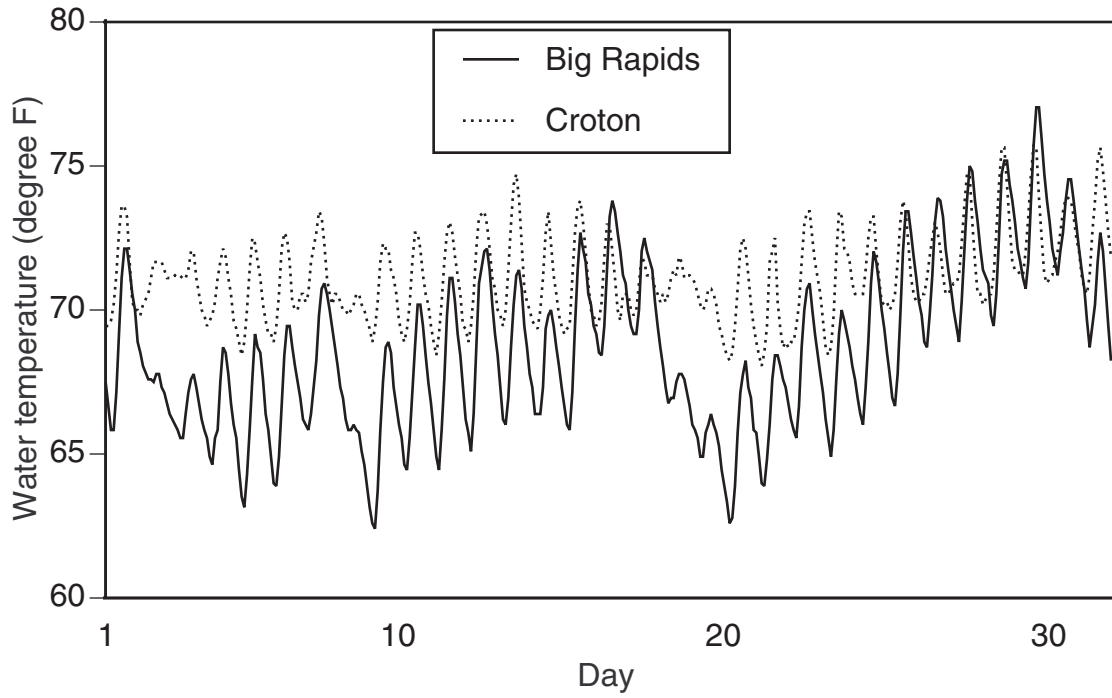


Figure 20.—August, 1991 water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.

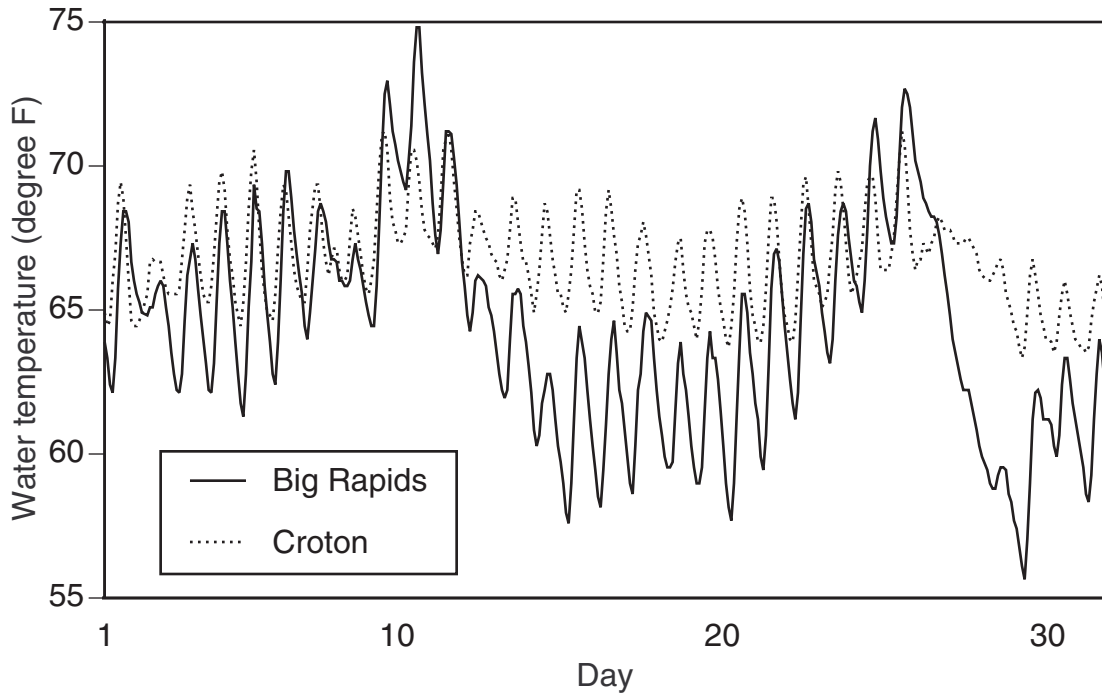


Figure 21.—August, 1992 water temperatures five miles upstream of Big Rapids, and four miles downstream of Croton Dam. Temperatures were collected at continuous two hour intervals. Data from Michigan Department of Natural Resources, Fisheries Division records.

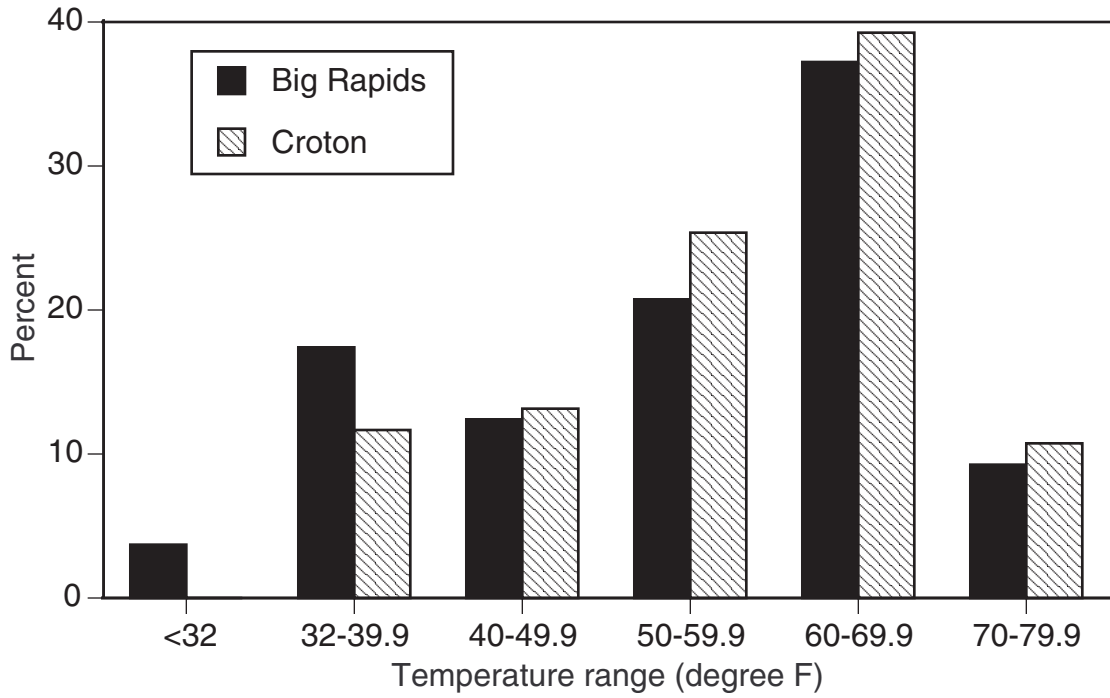


Figure 22.—Water temperature distributions five miles upstream of Big Rapids, and four miles downstream of Croton Dam, from May 3 through December 31, 1990. Data from Michigan Department of Natural Resources, Fisheries Division records.

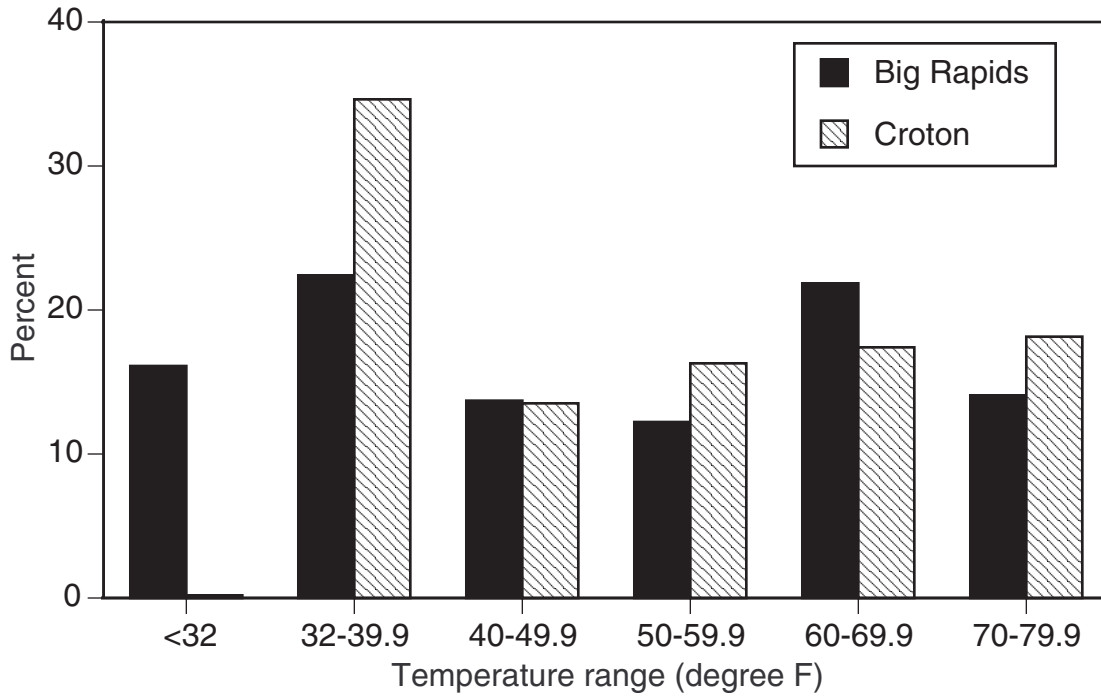


Figure 23.—Water temperature distributions five miles upstream of Big Rapids, and four miles downstream of Croton Dam, from January 1 through December 31, 1991. Data from Michigan Department of Natural Resources, Fisheries Division records.



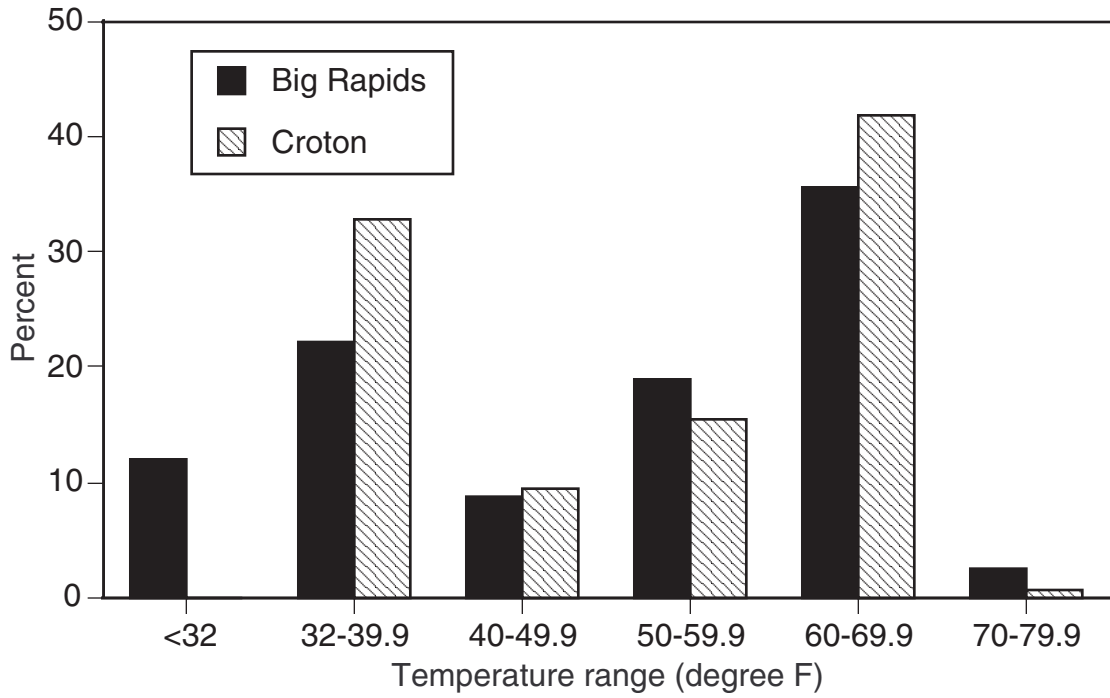


Figure 24.—Water temperature distributions five miles upstream of Big Rapids, and four miles downstream of Croton Dam, from January 1 through October 21, 1992. Data from Michigan Department of Natural Resources, Fisheries Division records.

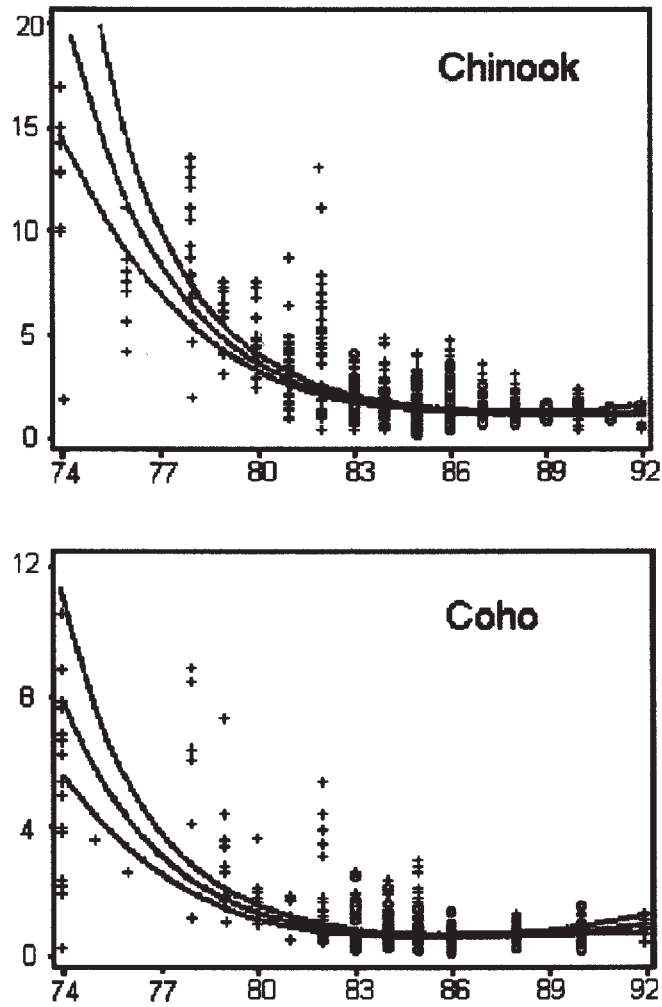


Figure 25.—PCB concentrations in Lake Michigan coho and chinook salmon fillets, 1974-92. Figure taken from Stow et al. (1995); lines represent three regressions evaluated for fit to the data.

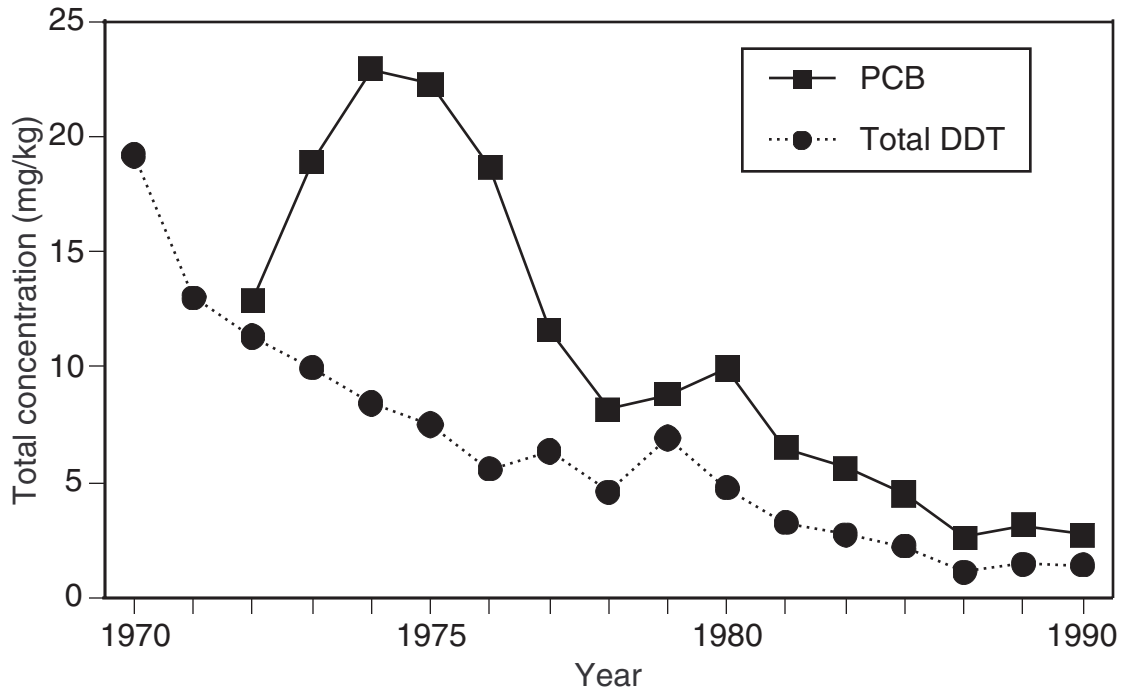


Figure 26.—Mean total PCB and DDT concentrations in whole lake trout from the Great Lakes, 1970-90. Data from Wood et al. (1995).

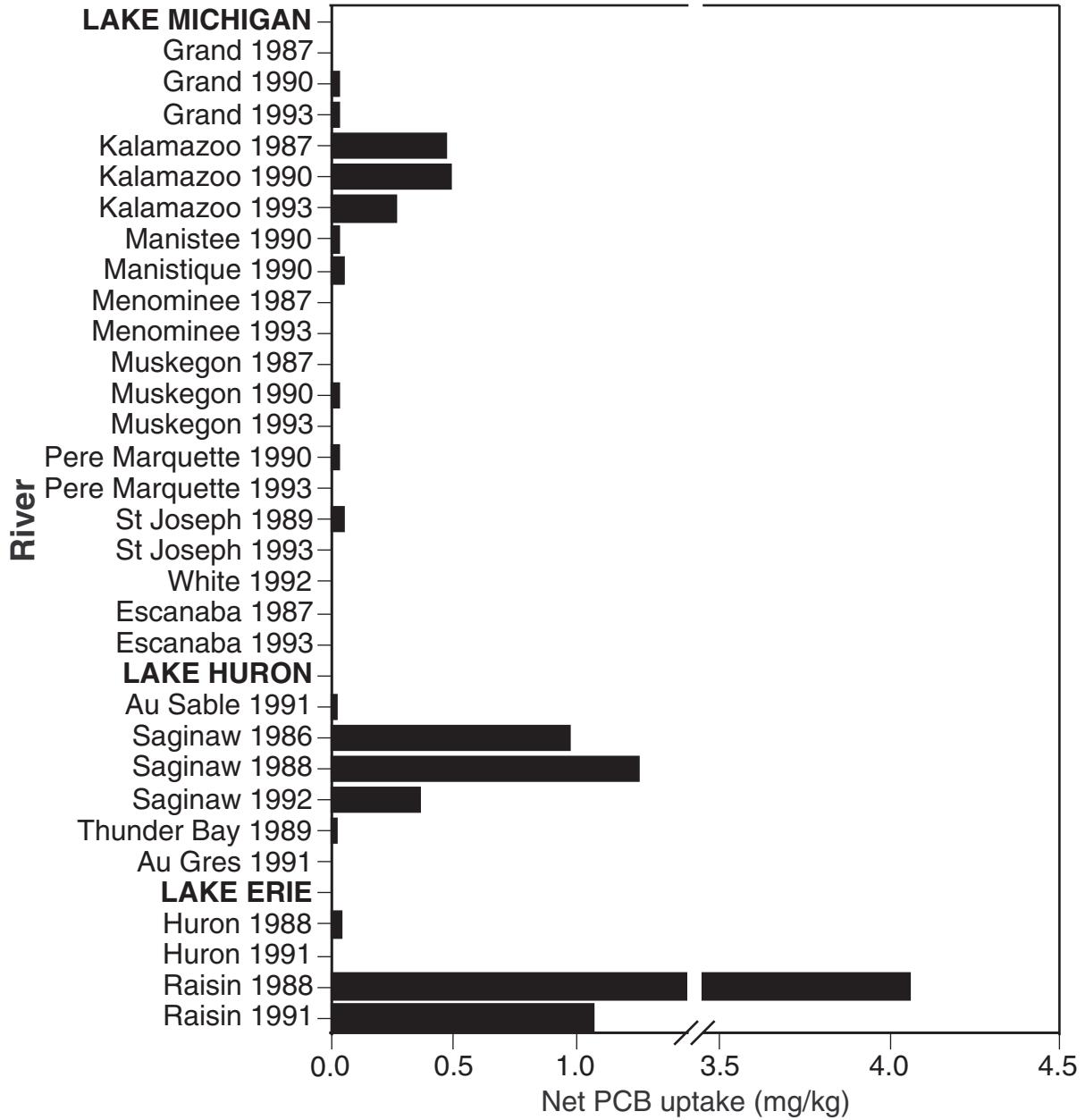


Figure 27.—Net uptake of PCBs in channel catfish caged for 27 to 29 days at the mouths of select Michigan rivers. Zero indicates no detectable uptake. Data taken from Wood et al. (1995).

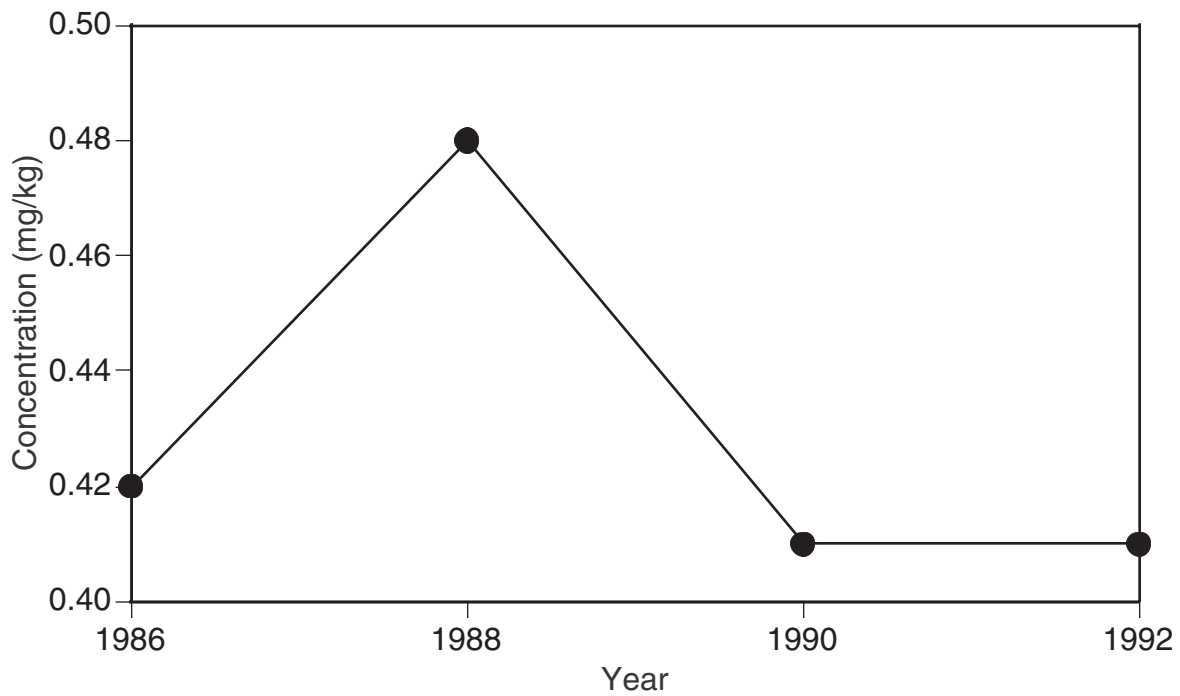


Figure 28.—Mean concentration of total chlordane in whole lake trout from Lake Michigan. Data taken from Wood et al. (1995).

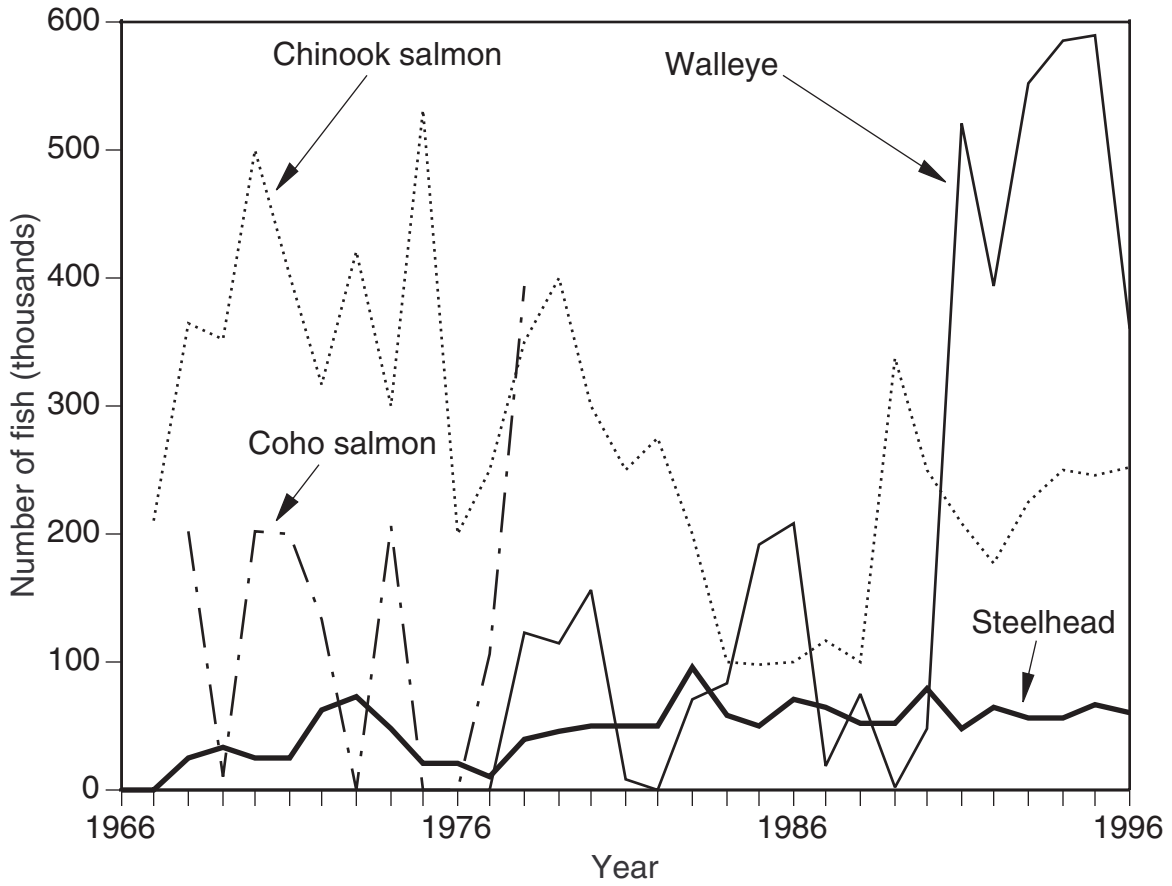


Figure 29.—Potamodromous fish stocking in the mainstem of the Muskegon River, downstream of Croton Dam, 1966-96. Data from Michigan Department of Natural Resources, Fisheries Division stocking records.

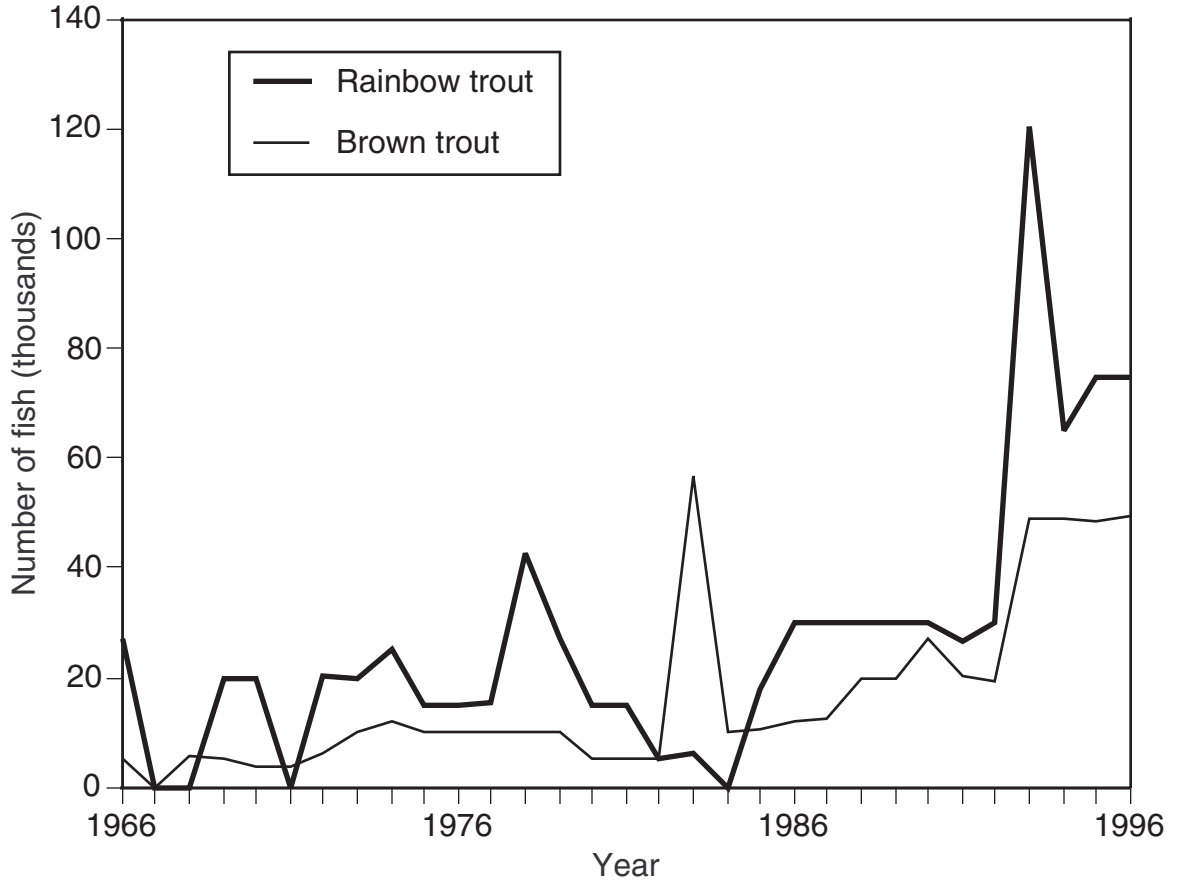


Figure 30.—River brown and rainbow trout stocking in the mainstem of the Muskegon River, downstream of Croton Dam, 1966-96. Data from Michigan Department of Natural Resources, Fisheries Division stocking records.